

WHAT IS CLAIMED IS:

1. A wireless device, comprising:

a transceiver configured to transmit data to a network via a wireless connection;

an output queue configured to store data that awaits transmission by the transceiver;

indicator logic configured to estimate a quality of the wireless connection based on an amount of time that the data remains in the output queue; and

an indicator configured to provide information regarding the quality of the wireless connection to a user of the wireless device.

2. The wireless device of claim 1, wherein the indicator logic includes:

measurement logic configured to:

read a first time at which data is stored in the output queue,

read a second time at which the data is dequeued by the transceiver, and

determine an amount of time that the data remains in the output queue based on a difference between the first and second times.

3. The wireless device of claim 1, wherein the indicator logic includes:

a quality estimator configured to:

generate a statistical measure of an amount of time that data remains in the output queue, and

use the statistical measure to estimate the quality of the wireless connection.

4. The wireless device of claim 3, wherein the statistical measure is generated for data stored in the output queue over a predetermined period of time.

5. The wireless device of claim 1, wherein the indicator includes a visual mechanism that provides a visual indication of the quality of the wireless connection to the user.

6. The wireless device of claim 1, wherein the indicator includes an audible mechanism that provides an audible signal relating to the quality of the wireless connection to the user.

7. The wireless device of claim 1, wherein the indicator includes a physical mechanism that provides a physical indication relating to the quality of the wireless connection to the user.

8. The wireless device of claim 1, wherein the network is the Internet.

9. A wireless device, comprising:
means for transmitting packets to a network via a wireless link;
means for temporarily storing packets that await transmission on the wireless link;
means for estimating a quality of the wireless link based on an amount of time that the packets are temporarily stored; and

means for providing information regarding the quality of the wireless link to a user of the wireless device.

10. A method for providing information regarding a wireless connection to a user of a wireless device, the method comprising:

 queuing packets that await transmission via the wireless connection;

 estimating a quality of the wireless connection based on an amount of time that the packets are queued; and

 providing information regarding the quality of the wireless connection to the user of the wireless device.

11. The method of claim 10, wherein the estimating a quality of the wireless connection includes:

 reading a first time at which a packet is queued,

 reading a second time at which the packet is dequeued, and

 determining an amount of time that the packet is queued based on a difference between the first and second times.

12. The method of claim 10, wherein the estimating a quality of the wireless connection includes:

generating a statistical measure of an amount of time that the packets are queued, and
using the statistical measure to estimate the quality of the wireless connection.

13. The method of claim 12, wherein the statistical measure is generated for packets
that are queued over a predetermined period of time.

14. The method of claim 10, wherein the providing information regarding the quality
of the wireless connection includes:

presenting a visual indication of the quality of the wireless connection to the user.

15. The method of claim 10, wherein the providing information regarding the quality
of the wireless connection includes:

presenting an audible signal relating to the quality of the wireless connection to the user.

16. The method of claim 10, wherein the providing information regarding the quality
of the wireless connection includes:

presenting a physical indication relating to the quality of the wireless connection to the
user.

17. A system for providing information relating to a current state of a wireless
connection used by a wireless device, comprising:

measurement logic configured to:

 read a first time at which a packet that awaits transmission via the wireless connection is stored in a queue,
 read a second time at which the packet is dequeued from the queue, and
 determine an amount of time that the packet remained in the queue based on a difference between the first and second times;

a quality estimator configured to:

 generate a statistical measure of the amount of time that a plurality of packets remained in the queue, and
 estimate the current state of the wireless connection based on the statistical measure; and
 an indicator configured to present information regarding the current state of the wireless connection to a user of the wireless device.

18. The system of claim 17, wherein the statistical measure is generated for packets stored in the queue over a predetermined period of time.

19. The system of claim 17, wherein the indicator includes a visual mechanism that provides a visual indication of the current state of the wireless connection to the user.

20. The system of claim 17, wherein the indicator includes an audible mechanism that provides an audible signal relating to the current state of the wireless connection to the user.

21. The system of claim 17, wherein the indicator includes a physical mechanism that provides a physical indication relating to the current state of the wireless connection to the user.

22. A wireless device, comprising:
a transceiver configured to transmit data to a network via a wireless connection;
indicator logic configured to estimate a quality of the wireless connection based on an amount of time that it takes the transceiver to successfully transmit the data; and
an indicator configured to provide information regarding the quality of the wireless connection to a user of the wireless device.

23. The wireless device of claim 22, wherein the indicator logic includes:
measurement logic configured to measure a time interval from a time when the transceiver begins to transmit the data until a time when the transceiver receives confirmation of a successful transmission of the data.

24. The wireless device of claim 22, wherein the indicator logic includes:
a quality estimator configured to:

generate a statistical measure of an amount of time that it takes the transceiver to successfully transmit data, and

use the statistical measure to estimate the quality of the wireless connection.

25. The wireless device of claim 24, wherein the statistical measure is generated for data transmitted over a predetermined period of time.

26. The wireless device of claim 22, wherein the indicator includes a visual mechanism that provides a visual indication of the quality of the wireless connection to the user.

27. The wireless device of claim 22, wherein the indicator includes an audible mechanism that provides an audible signal relating to the quality of the wireless connection to the user.

28. The wireless device of claim 22, wherein the indicator includes a physical mechanism that provides a physical indication relating to the quality of the wireless connection to the user.

29. The wireless device of claim 22, wherein the network is the Internet.

30. A wireless device, comprising:

means for transmitting packets to a network via a wireless link;

means for estimating a quality of the wireless link based on an amount of time that it takes to successfully transmit the packets; and

means for providing information regarding the quality of the wireless link to a user of the wireless device.

31. A method for providing information regarding a wireless connection to a user of a wireless device, the method comprising:

transmitting packets via the wireless connection;

estimating a quality of the wireless connection based on an amount of time that it takes to successfully transmit the packets; and

providing information regarding the quality of the wireless connection to the user of the wireless device.

32. The method of claim 31, wherein the estimating a quality of the wireless connection includes:

measuring a time interval from a time when transmission of the packets begins until a time when confirmation of a successful transmission of the packets is received.

33. The method of claim 31, wherein the estimating a quality of the wireless connection includes:

generating a statistical measure of an amount of time that it takes to successfully transmit packets, and

using the statistical measure to estimate the quality of the wireless connection.

34. The method of claim 33, wherein the statistical measure is generated for packets that are transmitted over a predetermined period of time.

35. The method of claim 31, wherein the providing information regarding the quality of the wireless connection includes:

presenting a visual indication of the quality of the wireless connection to the user.

36. The method of claim 31, wherein the providing information regarding the quality of the wireless connection includes:

presenting an audible signal relating to the quality of the wireless connection to the user.

37. The method of claim 31, wherein the providing information regarding the quality of the wireless connection includes:

presenting a physical indication relating to the quality of the wireless connection to the user.

38. A system for providing information relating to a current state of a wireless connection used by a wireless device, comprising:

measurement logic configured to measure a time interval from a time when transmission of packets begins until a time when confirmation of successful transmission of the packets is received;

a quality estimator configured to:

generate a statistical measure of an amount of time that it takes to successfully transmit the packets, and

estimate the current state of the wireless connection based on the statistical measure; and

an indicator configured to present information regarding the current state of the wireless connection to a user of the wireless device.

39. The system of claim 38, wherein the statistical measure is generated for packets transmitted over a predetermined period of time.

40. The system of claim 38, wherein the indicator includes a visual mechanism that provides a visual indication of the current state of the wireless connection to the user.

41. The system of claim 38, wherein the indicator includes an audible mechanism that provides an audible signal relating to the current state of the wireless connection to the user.

42. The system of claim 38, wherein the indicator includes a physical mechanism that provides a physical indication relating to the current state of the wireless connection to the user.

43. A wireless device, comprising:
a transceiver configured to transmit data to a network via a wireless connection;
an output queue configured to store data that awaits transmission by the transceiver;
indicator logic configured to estimate a quality of the wireless connection based on at least one of queuing behavior of the data and transceiver behavior relating to the data; and
an indicator configured to provide information regarding the quality of the wireless connection to a user of the wireless device.

44. The wireless device of claim 43, wherein the queuing behavior relates to an amount of time that the data remains in the output queue before being dequeued by the transceiver.

45. The wireless device of claim 43, wherein the transceiver behavior relates to an amount of time that it takes for the transceiver to successfully transmit the data.